

Appln No. 09/939,527

Reply to Office Action of 03/31/2003

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A coolant additive composition comprising:

a matrix material and an additive component, the additive component being ~~located in~~ distributed substantially throughout the matrix material and effective, when released into a coolant, to provide at least one benefit to the coolant,

the matrix material is effective to reduce the rate of release of the additive component into the coolant relative to an identical composition without the matrix material.

2. (original) The additive composition of claim 1 wherein the matrix material comprises at least one polymeric material.

3. (original) The additive composition of claim 1 wherein the matrix material is substantially insoluble in the coolant or is partially soluble in the coolant.

4. (original) The additive composition of claim 2 wherein the matrix material includes a portion which is soluble in the coolant and is effective, when released into the coolant, to provide at least one benefit to the coolant.

5. (original) The additive composition of claim 1 wherein the additive component comprises at least one active ingredient selected from the group consisting of microbiocides, buffers, cavitation liner pitting inhibitors, metal corrosion inhibitors, hot surface corrosion inhibitors, defoaming agents, hot surface deposition inhibitors, scale inhibitors, detergents, dispersants,

surfactants and mixtures thereof.

6. (original) The additive composition of claim 1 wherein the matrix material is initially a solid in the composition or initially a gel in the composition.

7. (original) The additive composition of claim 2 wherein the polymeric material includes polymer-repeating units derived from an olefin component having 2 to about 12 carbon atoms per molecule.

8. (original) The additive composition of claim 7 wherein the olefin component is selected from a group consisting of ethylene, propylene and mixtures thereof.

9. (original) The additive composition of claim 7 wherein the olefin component is ethylene.

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10. (original) The additive composition of claim 2 wherein the polymeric material comprises a copolymer of ethylene and vinyl acetate.

11. (original) The additive composition of claim 2 wherein the polymeric material is at least partially oxidized.

12. (original) The additive composition of claim 2 wherein the polymeric material is an oxidized polyethylene wax.

13. (original) The additive composition of claim 1 wherein the matrix material includes an aliphatic acid component.

14. (currently amended) The additive composition of claim 1

wherein the composition is substantially solid and has more than one layer, each layer comprises a different mixture of the additive component and the matrix material.

15. (original) The additive composition of claim 1 further comprising a coating material surrounding at least a portion of the additive material and the matrix material, the coating material being present in an amount effective to reduce the rate of release of the additive component into the coolant relative to an identical additive composition without the coating material.

16. (original) The additive composition of claim 15 wherein the coating material comprises a coating polymeric material.

17. (original) The additive composition of claim 16 wherein the coating polymeric material comprises polyethylene vinyl acetate.

18. (original) The additive composition of claim 15 wherein the coating material is substantially insoluble in the coolant or partially soluble in the coolant.


19. (original) The additive composition of claim 18 wherein the coating material includes a portion which is soluble in the coolant and is effective, when released into the coolant, to provide at least one benefit to the coolant.

20. (original) The additive composition of claim 1 wherein the composition further comprises a release enhancer component in an amount effective to increase the release rate of the additive component from the composition relative to an identical composition without the release enhancer component.

21. (original) The additive composition of claim 1 wherein the composition further comprises a reinforcement component in an amount effective to increase the structural strength of the composition relative to an identical composition without the reinforcement component.

22. (currently amended) A coolant additive composition comprising:

a sustained release component and an additive component, the additive component is effective to provide at least one benefit to a coolant when released into the coolant,

 the sustained release component is partially soluble in the coolant and is effective to reduce the rate of release of the additive component into the coolant relative to an identical composition without the sustained release component, the sustained release component includes a portion which is soluble in the coolant and is effective, when released into the coolant, to provide at least one benefit to the coolant.

23. (canceled)

24. (original) The additive composition of claim 22 wherein the sustained release component includes at least one of a matrix and a coating.

25. (original) The additive composition of claim 22 wherein the sustained release component includes both a matrix and a coating.

26. (original) The additive composition of claim 22 wherein the sustained release component comprises at least one polymeric

material.

27. (original) A method of producing an additive composition for providing a benefit to a coolant, comprising the steps of:

combining an additive component with a matrix material to form a mixture, the additive component being effective to provide at least one benefit to a coolant when released into the coolant, the matrix material comprising a polymeric material, and

forming one or more discrete units of the mixture, the matrix material being present in an amount effective, when the one or more discrete units are contacted with a coolant, to reduce the rate of release of the additive component into the coolant.

28. (original) The method of claim 27 wherein the one or more discrete units provide a reduced rate of release of the additive component into a coolant relative to an identical one or more units without the matrix material.

29. (original) The method of claim 27 which further comprises providing a coating material on the one or more discrete units, the coating material being effective to reduce the rate of release of the additive component into a coolant relative to an identical one or more units without the provided coating material.

30. (original) The method of claim 29 wherein the matrix material in the one or more discrete units is substantially coolant insoluble or partially coolant soluble.

31. (currently amended) A method of producing an additive composition for providing a benefit to a coolant comprising the steps of:

providing an additive composition including at least one

additive effective, when released into a coolant, to provide a benefit to the coolant; and

providing a coating material on the additive composition to form a coated additive composition, the coating material being partially coolant soluble and effective, when the coated additive composition is contacted with a coolant, to reduce the rate of release of the additive composition into a coolant relative to an identical additive composition without the coating material, the coating material further including a portion which is soluble in a coolant and is effective, when released into the coolant, to provide at least one benefit to the coolant.

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Claims 32 to 43 (canceled).

44. (new claim) A coolant additive composition comprising a sustained release component including both a matrix and a coating, and an additive component, the additive component is effective to provide at least one benefit to a coolant when released into the coolant,

the sustained release component is partially soluble in the coolant and is effective to reduce the rate of release of the additive component into the coolant relative to an identical composition without the sustained release component.

45. (new claim) The additive composition of claim 44 wherein the sustained release component comprises at least one polymeric material.
